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Mertz, Prema Thursday, January 16, 2003 8:05 AM STIC-Biotech/ChemLib

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Prema Mertz, Ph.D. Primary Examiner Art Unit 1646 Crystal Mall 1, Room 10E-01 United States Patent & Trademark Office # (703) 308-4229

Point of Contact P. Sheppard elephone number: (703) 308-4499

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=> d 14 1-3 bib ab L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS AN 2001:868518 CAPLUS DN 136:4735 TI A novel polypeptide, a human natural killer cell enhancing factor B13.64 and the polynucleotide encoding the polypeptide IN Mao, Yumin, Xie, Yi PA Shanghai Biowindow Gene Development Inc., Peop. Rep. China SO PCT Int. Appl., 38 pp. CODEN: PIXXD2 DT Patent LA Chinese FAN.CNT 1 KIND DATE APPLICATION NO. PATENT NO. WO 2001-CN855 PI WO 2001090177 A1 20011129 20010521 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CO. CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG CN 1324837 A 20011205 CN 2000-115801 20000524 PRAI CN 2000-115801 A 20000524 AB The present invention discloses a novel polypeptide, a human natural killer cell enhancing factor B13.64, the polynucleotide encoding

polypeptide and the method for producing the polypeptide by

tumor, hemopathy, development disturbance disease, HIV

disease and various inflammation etc. The invention also

recombinant technol. The invention also discloses the uses of the polypeptide in methods for treating various diseases, such as

agonists against the polypeptide and the therapeutic action thereof.

=> s 13 (5a) (antibod?)

the

DNA

malignant

discloses the

infection, immunol.

3 L3 (5A) (ANTIBOD?)

The invention also discloses the uses of the polynucleotide encoding the novel human natural killer cell enhancing factor B13.64. RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS AN 1997:151433 CAPLUS DN 126:153669 TI Cloning and cDNA sequence of human natural killer cell enhancing factor C and its diagnostic and therapeutic uses IN Ni, Jian; Yu, Guo-Liang; Gentz, Reiner; Rosen, Craig A. PA Human Genome Sciences, Inc., USA; Ni, Jian; Yu, Guo-Liang; Gentz, Reiner; Rosen, Craig A. SO PCT Int. Appl., 60 pp. CODEN: PIXXD2 DT Patent LA English FAN.CNT I APPLICATION NO. KIND DATE PATENT NO. DATE WO 1995-US7200 PI WO 9639424 A1 19961212 19950606 W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG AU 9528186 A1 19961224 AU 1995-28186 19950606 PRAI WO 1995-US7200 19950606 AB The cDNA sequence and the corresponding deduced amino acid protein putatively identified as a natural killer cell enhancing factor (NKEF C) are provided. The cDNA was discovered in a cDNA library derived from cycloheximide-treated CEM cells. It is highly expressed in liver, skeletal muscle, pancreas, testis, and ovary, moderately expressed in placenta, lung, prostate, small intestine, and colon; and lowly expressed in brain, spleen, thymus, and peripheral blood structurally related to a family of highly conserved oxidative stress

genes. It contains an open reading frame encoding a protein of

acid residues, of which approx. the first 30 amino acid residues

putative leader sequence such that the mature protein comprises

271 amino

are the

241 amino

1

acids. The protein exhibits the highest degree of homol. to NKEF

expressed from NK-sensitive erythroleukemia cell line K562 with

identity and 83.333% similarity over the entire amino acid stretch. Recombinant techniques for expression of NKEF C are described, including

(1) bacterial expression using the Escherichia coli expression vector

pQE-9, (2) expression in COS cells using the pcDNAI/Amp vector, (3)

cloning and expression using the baculovirus expression system

pA2 vector (a modification of the pVL941 vector) in Sf9 cells, and (4)

expression via gene therapy with the pMV-7 vector based on the Moloney

murine sarcoma virus backbone. Diagnostic methods for detecting a

mutation in the NKEF C nucleic acid sequence and detecting

of polypeptide for detecting diseases are also disclosed. NKEF C

growth inhibitory effects against human leukemia cells and antiviral

activity against vesicular stomatitis virus. It can be used for preventing and/or treating viral infections, inflammation, neoplasia, and

damage from superoxide radicals.

L4 ANSWER 3 OF 3 USPATFULL

AN 97:20653 USPATFULL

DNA's encoding natural killer cell enhancing factor

Shau, Hungyi, Cerritos, CA, United States

Golub, Sidney H., Los Angeles, CA, United States

PA The Regents Of The University Of California, Oakland, CA, United States

(U.S. corporation)

US 5610286

19970311

US 1994-299162 19940831 (8)

RLI Continuation-in-part of Ser. No. US 1994-232189, filed on 3 May 1994.

now abandoned which is a continuation-in-part of Ser. No. US 1991-787148, filed on 4 Nov 1991, now patented, Pat. No. US 5250295

DT Utility

Granted

EXNAM Primary Examiner: Ulm, John; Assistant Examiner: Mertz, Prema

LREP Poms, Smith, Lande & Rose

CLMN Number of Claims: 2

ECL Exemplary Claim: 1

DRWN 3 Drawing Figure(s); 3 Drawing Page(s)

LN.CNT 1323

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Recombinant DNA molecules comprising a DNA sequence encoding either NKEF

(Natural Killer Enhancing Factor) A or B or their amino acid sequence

variants. Essentially pure natural killer enhancing factor comprising

the amino acid sequence of NKEF A or B or their amino acid sequence

variants. Compositions of matter for use in enhancing the activity οf

natural killer cells; the composition comprising an anchor moiety

to

which is linked either NKEF A or B or their amino acid sequence variants. Methods for enhancing the in vivo activity of natural killer

cells; the methods comprising introducing in vivo a sufficient amount of

either NKEF A or B or their amino acid sequence variants linked

anchor moiety. In a method for inducing leukocyte activation

proliferation wherein the leukocytes are treated with a cytokine

improvement comprising treating the leukocytes with the cytokine in the

presence of NKEF A or B or their amino acid sequence variants.

=> d his

(FILE 'HOME' ENTERED AT 12:10:29 ON 16 JAN 2003)

FILE 'MEDLINE, CAPLUS, USPATFULL' ENTERED AT

12:10:50 ON (16 JAN 2003

0 SKILLER CELL ENHACING FACTOR# Ll

39 S KILLER CELL ENHANCING FACTOR L2

40 S KILLER CELL ENHANCING FACTOR# L3

1.4 3 S L3 (5A) (ANTIBOD?)